IN THE CLAIMS:

1. (Currently Amended) A tracking control apparatus for an optical disc which has wobble grooves as tracks, comprising:

a signal detection unit ~~operable to~~ including

an optical head to transmit a push-pull signal from an optical spot focused on the optical disc,

a low pass filter connected to the optical head, the low-pass filter receiving the push-pull signal, removing a wobble signal from the push-pull signal, and outputting a tracking error signal, and

a band-pass filter of a wobble signal band connected to the optical head, the band-pass filter receiving the push-pull signal and allowing the wobble signal from the push-pull signal to pass through;

~~detecting a tracking error signal and a wobble signal from an optical spot focused on the optical disc;~~

a speed calculation unit ~~operable to calculate~~ calculating, in a tracking-off state, a relative moving speed between the optical spot and the tracks, from (i) a zero-cross point cycle in the tracking error signal and (ii) a track pitch;

a polarity judgment unit ~~operable to judge~~ judging, by a polarity judgment, that the optical spot is on a land if a wobble signal amplitude value is equal to or lower than a predetermined value in vicinity of a zero-cross point; and

a moving direction judgment unit ~~operable to~~, when the relative moving speed is within a predetermined range and the polarity judgment unit has judged that the optical spot is on a land, ~~judge~~ judging a moving direction of the optical spot relative to the tracks, from a

rise/decay direction of the tracking error signal.

2. (Currently Amended) The tracking control apparatus of Claim 1 further comprising

a control unit ~~operable to perform~~ performing a tracking lead-in by reducing the relative moving speed, based on the relative moving speed calculated by the speed calculation unit and the moving direction, and

the moving direction judgment unit judges whether the optical spot is moving from an inner circumference track toward an outer circumference track or from the outer circumference track toward the inner circumference track, according to whether a differential coefficient of the tracking error signal is positive or negative.

3. (Currently Amended) The tracking control apparatus of Claim 2, wherein

the control unit includes:

an eccentricity storing sub-unit ~~operable to calculate~~ calculating an amount of eccentricity per rotation of the optical disc, from a moving speed and a moving direction that are calculated and judged by the speed calculation unit and the moving direction judgment unit based on the tracking error signal corresponding to one-half or more rotation of the optical disc, and to store data of the calculated amount of eccentricity;

a following operation sub-unit ~~operable to cause~~ causing the optical spot to follow a specific track among a plurality of eccentricity tracks crossing the optical spot, with timing when the specific track passes the optical spot, based on the amount of eccentricity stored in the eccentricity storing sub-unit; and

a first lead-in sub-unit ~~operable to lead~~ leading a tracking into the specific track or a track in vicinity of the specific track while the optical spot is following the specific track.

4. (Original) The tracking control apparatus of Claim 3, wherein

the specific track is approximately at a center of the plurality of eccentricity tracks.

5. (Currently Amended) The tracking control apparatus of Claim 2, wherein

the control unit includes:

an eccentricity storing sub-unit ~~operable to calculate~~ calculating an amount of eccentricity per rotation of the optical disc, from a moving speed and a moving direction that are calculated and judged by the speed calculation unit and the moving direction judgment unit based on the tracking error signal corresponding to one-half or more rotation of the optical disc, and to store data of the calculated amount of eccentricity;

a second following operation sub-unit ~~operable to cause~~ causing the optical spot to follow a track that is approximately at a center of the plurality of eccentricity tracks, based on the amount of eccentricity stored in the eccentricity storing sub-unit; and

a second lead-in sub-unit ~~operable to~~, with given timing, ~~lead~~ leading a tracking into the track approximately at the center of the plurality of eccentricity tracks.

6. (Currently Amended) The tracking control apparatus of Claim 2, wherein

the control unit includes:

an amplitude calculation sub-unit ~~operable to calculate~~ calculating a wobble

signal amplitude of a land that is adjacent to a given point on a track of the optical disc, using a reference radius position of a wobble phase, a track pitch, a wobble length, a track number, and a rotation angle;

an amplitude storing sub-unit ~~operable to store~~ storing, as a measurement data sequence of wobble signal amplitude, moving directions that are judged by the moving direction judgment unit prior to a tracking lead-in at an end of a seek by restricting a moving speed of the optical spot to within the predetermined range; and

an error correction sub-unit ~~operable to correct~~ correcting an error of a groove count value in a middle of a seek of an object track, according to a correlation between (i) a data sequence of wobble signal amplitude values for a plurality of lands crossed by the optical spot that are calculated by the amplitude calculation sub-unit from groove count values counted during the seek of the object track and (ii) the measurement data sequence, using the calculated wobble signal amplitude value data sequence as a template.

7. (Currently Amended) The tracking control apparatus of Claim 2, wherein

the polarity judgment unit includes at least one of:

a first judgment sub-unit ~~operable to judge~~ judging that the optical spot is on a groove if a RF signal amplitude value from the optical disc is equal to or higher than a predetermined value;

a second judgment sub-unit ~~operable to judge~~ judging whether the optical spot is on a groove or a land based on total light quantity signals from the groove and the land of the optical disc if there is a difference between the total light quantity signals; and

a third judgment sub-unit ~~operable to judge~~ judging whether the optical spot is on

a groove or a land based on total light quantity signals from the groove and the land of the optical disc if there is a difference between the total light quantity signals, excluding portions of the optical disc for which the RF signal amplitude value from the optical disc is equal to or higher than the predetermined value, wherein

the moving direction judgment unit further judges the moving direction of the optical spot relative to the tracks from the rise/decay direction of the tracking error signal if any of the first to third judgment sub-units judges by a polarity judgment whether the optical spot is on a groove or a land.

8. (Currently Amended) A tracking control method for an optical disc which has wobble grooves as tracks, comprising the steps of:

transmitting a push-pull signal from an optical spot focused on the optical disc;

detecting a tracking error signal ~~and~~ using a low-pass filter to filter a push-pull signal and remove a wobble signal from the push-pull signal;

detecting a wobble signal ~~from an optical spot focused on the optical disc~~ using a band-pass filter of a wobble signal band to filter the push-pull signal and allowing the wobble signal from the push-pull signal to pass through;

calculating, in a tracking-off state, a relative moving speed between the optical spot and the tracks, from a zero-cross point cycle in the tracking error signal;

judging, by a polarity judgment, that the optical spot is on a land if a wobble signal amplitude value is equal to or lower than a predetermined value in vicinity of a zero-cross point; and

judging a moving direction of the optical spot relative to the tracks from a

rise/decay direction of the tracking error signal when the relative moving speed is within a predetermined range and it has been judged that the optical spot is on a land.

9. (Currently Amended) A computer readable medium, encoded with a tracking control program for causing a computer to perform a tracking control of an optical disc which has wobble grooves as tracks, ~~stored in a computer readable medium,~~ which when executed by a processor, causes the processor to perform the steps of:

transmitting a push-pull signal from an optical spot focused on the optical disc;

detecting a tracking error signal ~~and~~ using a low-pass filter to filter a push-pull signal and remove a wobble signal from the push-pull signal;

detecting a wobble signal ~~from an optical spot focused on the optical disc~~ using a band-pass filter of a wobble signal band to filter the push-pull signal and allowing the wobble signal from the push-pull signal to pass through;

calculating, in a tracking-off state, a relative moving speed between the optical spot and the tracks, from (i) a zero-cross point cycle in the tracking error signal and (ii) a track pitch;

judging, by a polarity judgment, that the optical spot is on a land if a wobble signal amplitude value is equal to or lower than a predetermined value in vicinity of a zero-cross point; and

judging a moving direction of the optical spot relative to the tracks from a rise/decay direction of the tracking error signal when the relative moving speed is within a predetermined range and it has been judged that the optical spot is on a land.

10. (New) The tracking control apparatus of Claim 7, wherein

the polarity judgment unit includes a first judgment sub-unit judging that the optical spot is on a groove if a RF signal amplitude value from the optical disc is equal to or higher than a predetermined value at a zero-cross point in the TE signal.

11. (New) The tracking control apparatus of Claim 1, wherein the signal detection unit further includes

a detector connected to the band-pass filter to obtain an amplitude component from the wobble signal.

12. (New) The tracking control apparatus of Claim 11, wherein the signal detection unit further includes

a low-pass filter connected to the detector to remove a partial amplitude variation from the amplitude component and output the wobble signal amplitude value.